ABSTRACT

An electrostatic spray device that maintains a consistent charge-to-mass ratio in order to maintain a consistent target spray quality is disclosed. During steady state conditions, the high voltage power supply adjusts the output voltage level in response to changing environmental and/or operating conditions. During transient conditions such as start-up, shut-down and changing flow rate conditions, the high voltage power supply ensures that the charge-to-mass ratio is maintained. During, start-up, for example, the high voltage power supply charges the high voltage electrode to a predetermined voltage level before the product is delivered to the charging location. During shut-down, the product delivery is stopped before the high voltage power supply shuts off power to the high voltage electrode, and during changes in product flow rate, the voltage level of the high voltage electrode is adjusted to maintain a consistent charge-to-mass ratio. The present invention also prevents afterspray by discharging the stored charge remaining in storage elements of the high voltage power supply.

More than 150